	American Energy Corporation Standard Operating Procedure: Slurry Line Spill Preparedness	Number:	PPS-2.0
		Date:	June 7, 2011
SOP Owner	Preparation Plant	Approved:	<i>Rick Taylor</i>

Purpose:

The following procedure was created to memorialize operational procedures and reduce response time in order to minimize the effect to soils and streams in the event a slurry line failure.

Background:

American Energy Corporation's ("AEC") preparation plant pumps its coal slurry to The Ohio Valley Coal Company's ("TOVCC") No.2 impoundment via a high density polyethylene ("HDPE") pipeline. The HDPE pipeline's specification is 12SDR7 from the AEC preparation plant for a distance of 12,500 feet, then changes to 10SDR11 pipe for the remaining 6,000 feet to TOVCC No. 2 slurry impoundment. The slurry pumps at rate of approximately 1,550 gallons per minute with 35 to 40% solids by weight with a specific gravity of 1.17 to 1.20. The solids consist mostly of clays and black shales with small amounts of coal.

There are two (2) sets of flow meters (a total of four (4) flow meters) installed on the slurry pipeline. Two flow meters are in the ground floor of the AEC preparation plant (the "AEC flow meters") and the other two flow meters are near TOVCC's No.2 Impoundment (the "TOVCC flow meters"). The flow meters relay flow rate in Gallons per Minute ("GPM") data back to the program logic controller ("PLC") at the AEC preparation plant. The PLC at the AEC preparation plant continuously compares the GPM between the four (4) flow meters, and continuously transmits this information to the computer and display at the AEC preparation plant control room, where the control room operator is stationed.


The PLC monitoring system will automatically send a visual alarm to the control room display monitor when a two percent (2%) to five percent (5%) difference in GPM is detected between both sets of flow meters for more than three (3) minutes. When a 2%-5% alarm is received, the plant will be manually shutdown per internal operating procedures, and plant personnel will perform a fresh water flush, shutting off the flow of slurry through the line by closing the valves at the thickener, and opening fresh water valves. The slurry line route will then be walked by plant personnel and/or contractors performing a visual leak inspection.

The PLC is also programmed to automatically shut down the slurry pumps if both sets of flow meter systems register a greater than five percent (5%) difference in GPM between both set of flow meters for more than thirty (30) seconds. Plant personnel follow internal procedures to shut the slurry valves at the thickener and begin a fresh water flush when an automatic shutdown occurs.

The alarms will not be triggered during the first five (5) minutes when the preparation plant is being started up at the beginning of a shift or after any idle or maintenance shift. This amount of time has been determined through operational tests, and is required to stabilize the slurry pump operation and flow meter monitoring system upon startup.

Intended Audience:

American Energy Corporation's management and preparation plant employees.

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Preparedness spill:

1. Inspect slurry line
 - a. Once a day, perform a visual inspection of the slurry line from the AEC Preparation Plant to Captina Creek.
 - b. Once a week, inspect the full length of the slurry line from the AEC Preparation Plant to the end of the slurry pipeline at The Ohio Valley Coal Company's No. 2 Slurry Impoundment.
 - c. Once a year pipeline integrity testing will be conducted on the high pressure portions of the pipeline. This generally will be below the 900 ft. elevation.
2. Pre-position or have available straw and anchors.
 - a. The bales of straw (tied with steel wire) will be stored at the former Roger Bunting's barns at 44030 John-Jarrett Road, Alledonia, Ohio (see Attached Map).
 - b. Roofbolts will be used to anchor the bales of straw; these are available in the supply yard.
 - c. Maintain a minimum water level in Pond No. 19. Pond 19 is designed to hold 0.98 acre feet, or 325,851 gallons. The slurry pipeline contains approximately 60,000 gallons, see calculation below:
 - 12,500 feet of 12SDR7, Inside diameter = 8.961 inches
 - $(3.14 * (8.961 \text{ in.}/2)^2)/144 \text{ in./ft} * 12,500 \text{ ft.} * 7.48 \text{ gallons/ft}^3 = 40,929 \text{ gallons}$
 - 6,000 feet of 10SDR11, Inside diameter = 8.717 inches
 - $(3.14 * (8.717 \text{ in.}/2)^2)/144 \text{ in./ft} * 6,000 \text{ ft.} * 7.48 \text{ gallons/ft}^3 = 18,591 \text{ gallons}$
 - Total 59,520 gallons = 40,929 gallons + 18,591 gallons
 - d. To divert the slurry that is in the pipeline in the event of leak, there is a "Hot Tap" device available in preparation plant's salary bathhouse. This device can be used to drill a hole in the pipeline to divert the slurry into Pond 19 and overflow sump located along the pipeline. See attached "Project R-0425-26" slurry line site map.
3. GPS coordinates of load out (emergency staging area).


The coordinates are:

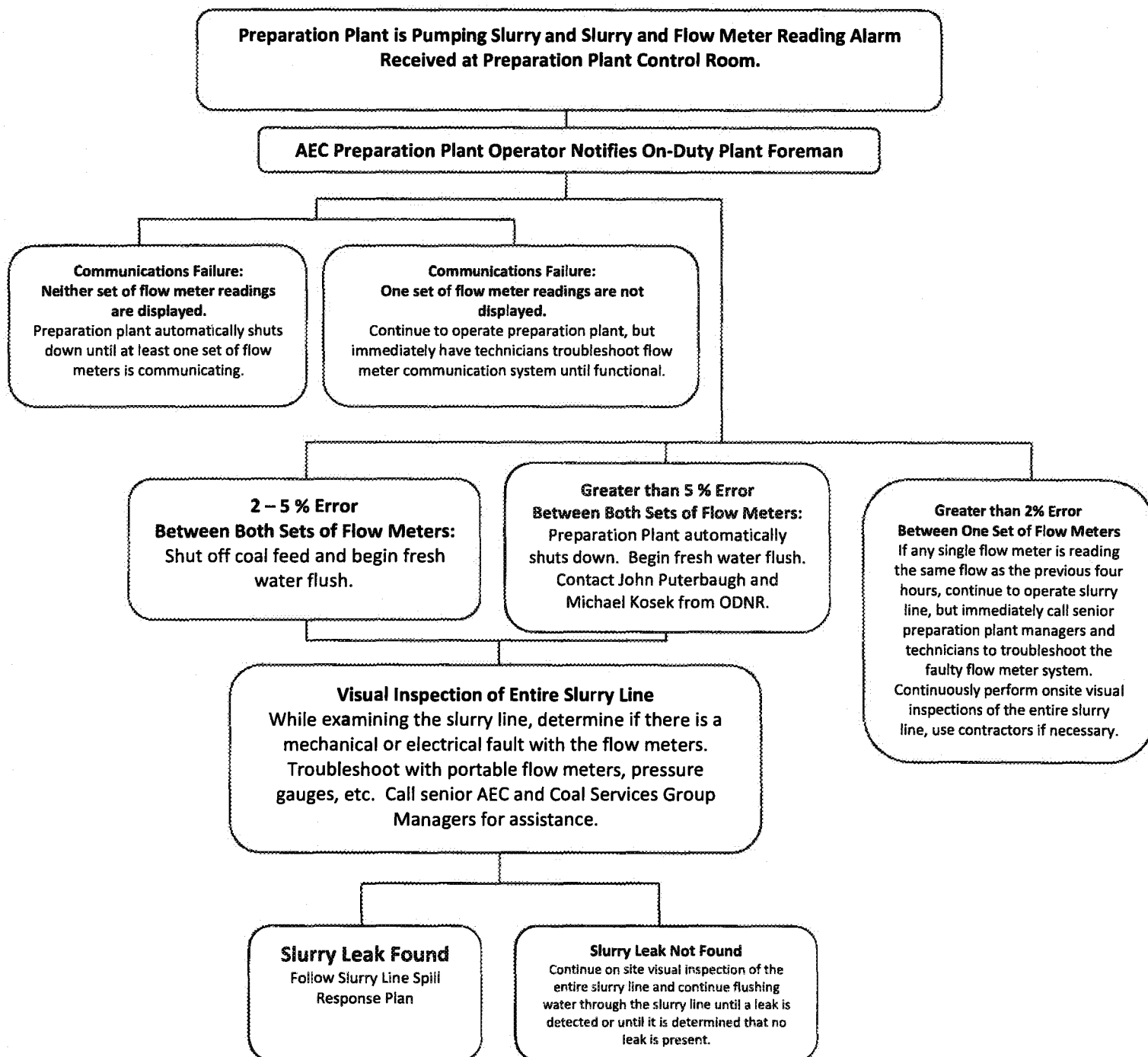
Decimal Degree:
 Lat 39.908986
 Long -81.024991


Degree Minute Second
 39D 54' 22.15"N
 81D 01' 30.06"W

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4. **Keep a current approved dump site plan.**
The approved dump site for clean up material is TOVCC No.2 slurry impoundment.
5. **Maintain markers along the Slurry Line**
To aid in the identification of the slurry line, it is the responsibility of the preparation plant manager to maintain the markers, which are placed along the slurry pipeline route.
6. **Train Employees.**
Preparation Plant managers will train employees annually on Slurry Line Spill Response Plan, Slurry Line Alarm Procedures, Leak Detection Standard Operating Procedures. Any new preparation plant employees will also be trained prior to starting work. A record showing who and when each employee was trained will be maintained.
7. **Keep American Energy's Backhoe in operational condition.** The backhoe will be kept in operational condition at all times to ensure that equipment necessary to respond to a slurry spill or potential slurry line failure.

	American Energy Corporation Standard Operating Procedure: Slurry Line Flow Meter Reading Alarm Response During Normal Preparation Plant Operation	Number:	PPS-4.1
		Date:	June 7, 2011
SOP Owner	Preparation Plant	Approved:	<i>Rick Taylor</i>



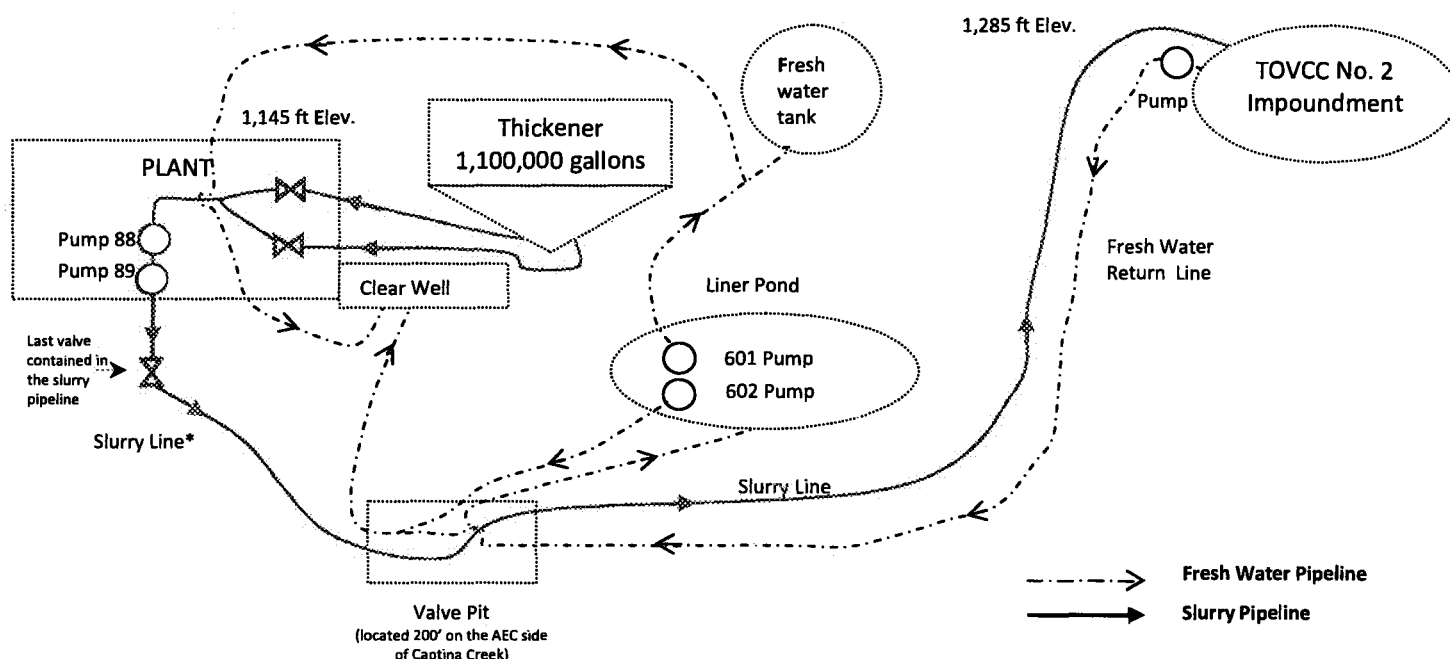
	American Energy Corporation Standard Operating Procedure: Thickener – Slurry Line Shutdown Procedures	Number:	PPS-5.0
		Date:	April 22, 2011
SOP Owner	Preparation Plant	Approved:	<i>Rick Taylor</i>

Purpose:

The following procedure was prevent the slurry in the thickener from being siphoned by the slurry line in the event that a leak occurs during a plant outage (the slurry pumps are idle).

Background History and illustrations:

The current system to transfer slurry from the American Energy Corporation's preparation plant to The Ohio Valley Coal Company's No. 2 Impoundment consists of the following:




If the thickener underflow slurry pumps No.88 and No. 89 are not operating a break in the slurry pipeline could siphon the 1,100,000 gallons of slurry out of the thickener.

Intended Audience:

AEC's management and preparation plant employees.

Procedural Steps:

The valves between thickener underflow and pumps No. 88 and No. 89 must be closed while the preparation plant is not operating, this will prevent any slurry from siphoning through the slurry line in the event of a mechanical failure in the slurry line.

	American Energy Corporation Standard Operating Procedure: Slurry Line Spill Response Plan	Number:	PPS-6.0
		Date:	April 21, 2011
SOP Owner	Preparation Plant	Approved:	<i>Rick Taylor</i>

Purpose:

The following procedure was created to minimize the effect to soils and streams in the event of a slurry line failure occurs, by reducing response time.

Background History and illustrations:

American Energy Corporation's ("AEC") preparation plant sends its fine refuse in slurry form to The Ohio Valley Coal Company's ("TOVCC") No. 2 impoundment via a buried HDPE pipeline (see map attached). The pipeline is made up of two segments. The first is about 12,500 feet in length and is heavy wall 12-inch SDR7 grade HDPE pipe that accommodates the higher pressures in the line near the plant. The remaining 6,000 feet runs at lower pressures, so it utilizes 10-inch SDR11 grade HDPE pipe. The operating pressure at the plant ranges from approximately 40 psi at start-up to 250 psi during operation. The specific gravity of the slurry ranges from 1.17 to 1.20 and contains 35 to 40% solids by weight. The solids are nominally minus 60 mesh in size and consist mostly of coal, clays and black shales.

This slurry line has had two mechanical failures since the line came into service on August 3, 2002. This standard operating procedure was derived from best practices learned in the previous spills.


Intended Audience:

AEC's management and preparation plant employees.

Procedural Steps:

The on-duty Preparation Plant Foreman is the responsible person to coordinate the spill efforts until senior AEC management arrive onsite. If a leak is detected or there is a possibility that a leak is occurring, equipment and personnel must be deployed following these guidelines:

1. The preparation plant foreman must immediately deploy personnel and equipment to the slurry spill area to begin the construction of small dams to reduce the contaminated area.
2. **Contact personnel according to the "Notification List" located in this document.**
3. **If the slurry spill is on land, isolate and contain the flow of the slurry-** Send construction equipment (backhoes, excavators, and Dozers) to the spill site to help with the construction of dams and containment sumps. Utilizes all available assets to build a containment sum, or dam around the affected area. The main goal is to prevent slurry from reaching Captina Creek.
4. **If slurry is entering the creek; restrict the creek's flow downstream from the affected area.**

	American Energy Corporation Standard Operating Procedure: Slurry Line Spill Response Plan	Number:	PPS-6.0
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SOP Owner	Preparation Plant	Approved:	<i>Bob Taylor</i>

- Obtain a verbal permit from the Ohio Environmental Protection Agency to construct earthen dikes below slurry spill area – material may be used from the sides of a stream channel or bottom.
- Construct straw bale dikes within the affected area – these can be placed in any manner to properly hold back flow. The bales can be anchored with steel or wooden stakes.

5. One method to remove slurry from the pipeline is to bore a hole into the pipeline via a device called a hot tap. The hot tap is located in the preparation plant foreman's bathhouse.

- Utilize a hot tap to direct the slurry in the line to Pond 19 or into a vacuum truck.

6. Remove the slurry from the affected areas.

- Utilize vacuum trucks to remove the slurry from affected areas in the creek and on the land – Staging areas will need constructed and trucks directed to the affected areas.
- Coordinate an approved location to dispose of material – trucks will need access maintained and good visibility. Truck drivers will need hazard trained for TOVCC's slurry impoundment and direction for dump locations.


7. Repair the broken Line

- Once the spill is contained start coordinating the materials needed to repair the pipe line (high density polyethylene welder, additional 12" SDR 7 high density polyethylene line, and excavator), and repair the damaged line.

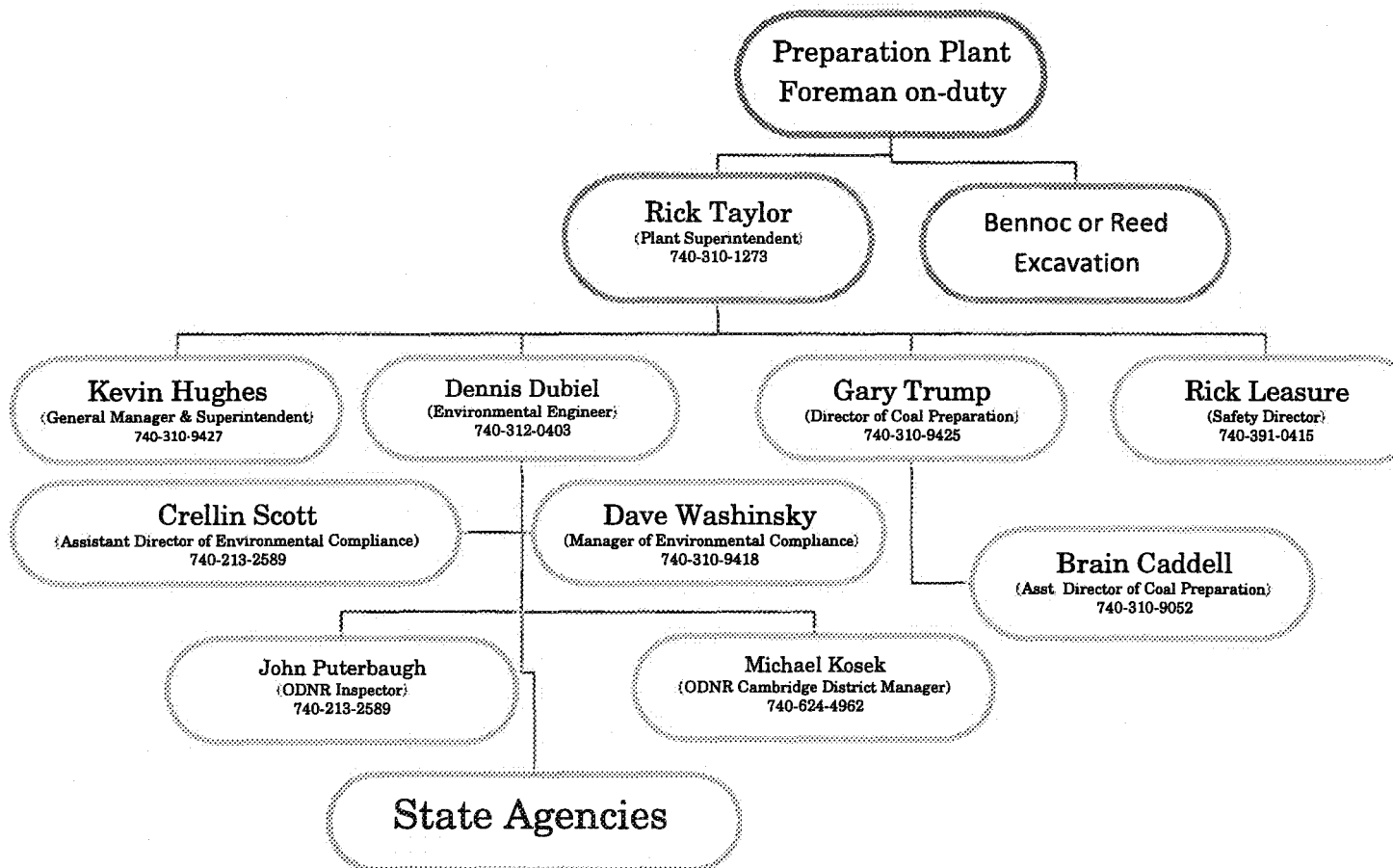
8. Coordinate the final clean up efforts with the OEPA and ODNR.


Note – Clean up contractors will need to have available equipment and resources. The following items may be needed for the clean up: small dozers track hoe, backhoe, skid-steer, light plants, chain saws, 4 wheel drive vehicles, trailers, hand tools, roof bolts, wooden stakes, straw bales, water trucks, vacuum trucks, haul trucks.

Good communication will need to be established and all required training will need to be performed on your site. This includes any and all individuals on the site.

	American Energy Corporation Standard Operating Procedure: Slurry Line Spill Response Plan	Number:	PPS-6.0
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SOP Owner	Preparation Plant	Approved:	<i>Rick Taylor</i>

Notification List



	American Energy Corporation Standard Operating Procedure: Slurry Line Spill Response Plan	Number:	PPS-6.0
		Date:	April 21, 2011
SOP Owner	Preparation Plant	Approved:	<i>Rick Taylor</i>

Additional Contact Information

a. Murray Energy Employees

- Preparation Plant Control Room – (740)-926-9152 ext. 670
- Rick Taylor (Plant Superintendent) – 740-310-1273
- Rick Leasure (Safety Director) – 740-391-0415
- John Puterbaugh (ODNR Inspector) – 614-264-3855 (cell, available weekdays from 7 AM to 6 PM) or 740-484-1527 (home)
- Michael Kosek (ODNR Cambridge District Manager (740-624-4962) (cell)
- Dennis Dubiel (Environmental Engineer) – 740-312-0403
- Ron Burdette (Chief Engineer) – 740-310-9025
- Gary Trump (Director of Coal Preparation) – 740-310-9425
- Brain Caddell (Asst. Director of Coal Preparation) – 740-310-9052
- Crellin Scott (Assistant Director of Environmental Compliance) – 740-310-03
- Dave Washinsky (Compliance Manager) – 740-310-9418

b. State Agencies

- | | |
|--|-------------------------|
| • Ohio Department of Natural Resources | Office – 1-740-493-9079 |
| • ODNR – Division of Wildlife | Office – 1-800-945-3543 |
| • Ohio State Patrol | Office – 1-740-695-0915 |
| • Ohio EPA | Office – 1-800-282-9378 |
| • Fire Department | Office – 1-740-926-1342 |
| • Natural Response Center | Office – 1-800-424-8802 |

c. Clean Up Contractors

Excavation and Construction

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|-------------------|-----------------------|
| • Bennoc Inc. | Cell – 1-740-391-1331 |
| • Reed Excavating | Cell – 1-740-391-1765 |

Vacuum Trucks and Spill Supplies

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|---------------------------|-------------------------|
| • Safety Kleen | Office – 1-440-992-8665 |
| • C&K Industrial Services | Office – 1-724-947-9401 |
| • MPW | Office – 1-800-827-8790 |
| • BBU (Central States) | Office – 1-800-837-8064 |
| • H&L Fluid Haulers | Cell – 1-740-581-0904 |

d. Pipe Line Repair Supplies

- | | |
|---------------|----------------------|
| • Jabo Supply | Cell- 1-304-481-0517 |
|---------------|----------------------|

e. Street Sweeper

- | | |
|-------------------|----------------------|
| • ICR Contracting | Cell -1-740-312-2649 |
|-------------------|----------------------|